

## WINDS.

The mean direction of the wind at the different stations of the Signal Service is shown on Chart II by the arrows, each arrow flying with the prevailing wind. The total movement in miles of the atmosphere, in all directions, as recorded by the anemometer at each station during March, furnishes some interesting maxima and minima. The following maxima may be specially mentioned: Cheyenne, 11,615 miles; Cape Henry, 10,100; Long Branch, 9,916; Breckenridge, Minnesota, 11,906; Erie, 12,042; Indianola, 10,495; Omaha, 9,353; Sandy Hook, 11,050. Among the chief minima are Baltimore, 3,800 miles; Augusta, 4,270; Lynchburg, 3,472; Nashville, 4,674; Pittsburgh, 4,806.

## TEMPERATURE OF WATER.

This element is presented by the table on the lower right-hand of Chart No. II. The table gives the maximum and minimum temperatures of the water at the different Lake, River and Sea-coast Stations, the observations having been taken at the bottom.

## VERIFICATIONS.

(1) The careful comparison of the published predictions (or Probabilities) with the weather following, as reported by telegraph, gives as the average of verifications 83.7 per cent. The average percentage of omissions to predict was 1.9.

(2) During the month of March there were displayed, at United States ports, 162 Cautionary Signals or Storm-warnings. Of this number 28 were not justified; the remainder, 134, were justified. The percentage of justification, therefore, was 83.7. There were reported seven storms for which no warning signals were ordered. During March no Cautionary Signals were displayed on the Lakes, because of the suspension of navigation. Their display will be resumed on the 15th of April.

## NAVIGATION.

A tabular exhibit of the oscillations of the rivers is given on Chart No. III. The remarkable ice-blockade on the coast from Cape Henry to Halifax, noted in the February Weather Review, was raised almost entirely about the first of March. But the European steamships arriving at United States ports in March reported unusually enormous ice-fields and icebergs, floating southward off the Atlantic coast.

(1) *The breaking up of Ice and re-opening of Navigation* has taken place as follows: At Rockford, Illinois, on the 31st; at Havana, Illinois, on the 26th; at Muscatine, Iowa, the Mississippi opened on the 31st, and at Fort Madison, Iowa, on the 29th; the Iowa river, at Iowa City, on the 14th; at Ellenwood, Kansas, on the 6th; at Lansing, Michigan, ice went out of Cedar river on the 31st; at Plattsmouth, Nebraska, ice broke in Platte river on the 14th, and in the Missouri river the 25th; at De Soto, Nebraska, the Missouri broke on the 29th; at Clear Creek, Nebraska, on the 30th; at Nichols, New York, the Susquehanna broke on the 16th; at Tioga, Pennsylvania, the Tioga river broke on the 15th; at Cleveland, Ohio, river cleared on the 16th; at Pennville, Pennsylvania, on the 16th; at Beloit, Wisconsin, ice cleared on the 29th; at Davenport, Iowa, the river was partly opened on the 30th; at Keokuk, river broke on the 14th; at Sandy Hook, the ice moved out on the 7th; at Toledo, on the 29th; at Leavenworth, river was cleared on the 16th; at Detroit, ice broke up on the 8th.